

**REMARKS**

This application has been carefully considered in connection with the Office Action dated November 5, 2007. Applicant thanks the Examiner for his thoughtful analysis and helpful comments that have been useful in creating this response. Reconsideration and allowance are respectfully requested in view of the following.

**Summary of Rejections**

Claims 1-20 and 22-29 were pending at the time of the Office Action.

Claims 1-19 and 27-29 were objected.

The Drawings were objected.

Claims 1-19 and 24-29 were rejected under 35 U.S.C. 112.

Claims 1-20 and 22-29 were rejected under 35 U.S.C. 103.

**Summary of Response**

Claims 2, 5, 6, 8-13, 15-19, 22, 23, 25, 26, and 28 remain as originally submitted or previously presented.

Claims 1, 14, 20, 24, 27, and 29 are currently amended.

Claim 3, 4, and 7 are cancelled.

Claim 30, 31, and 32 are new.

Claim 21 previously has been canceled.

The Specification is amended.

The Drawings are amended.

Remarks and Arguments are provided below.

### **Summary of Claims Pending**

Claims 1, 2, 5, 6, 8-20 and 22-32 are currently pending following this response.

### **Specification**

As requested in the Office Action of November 5, 2007, the specification has been checked to the extent necessary to determine the presence of all possible minor errors. As a result, the specification has been amended. Specifically, paragraphs [0038], [0039], [0040], [0041], [0046], [0047], [0048], [0050], [0051], [0053], [0055], [0057], [0059] and [0060] have been amended to correct typographical errors. This amendment is respectfully submitted not to introduce new matter, and is offered for clarification purposes.

### **Drawings**

Figures 1 and 7 have been amended. Fig. 1 has been amended to correct the drawing label for the wrapper to --12b--. Fig. 7 has been amended to correct the drawing label for the app server from "11a" to --10a-- and to correct the drawing label for the app server from "11c" to --10c-- These amendments are respectfully submitted not to introduce new matter, and are offered for clarification purposes.

In the Office Action it was noted by the Examiner that in Figs. 6 and 7 certain dotted lines were missing from the original drawings filed. Applicant respectfully disagrees and directs the attention of the Examiner to general computer system #4 84 in Fig. 6. A dotted-dashed line connects the general computer system #4 84 with the second rules engine 28, directly above and centered on the box representing the general computer system #4 84. This same dotted-dashed

line is present in Fig. 7. Applicant thinks the Examiner may have overlooked these dotted-dashed lines because they were relocated with respect to their location in the originally filed hand drawings. In the process of converting the informal hand drawing to the formal drawing, the drafter judged that this relocation contributed to ease of understanding by avoiding crossing other lines of communication while retaining the original meaning of the dotted-dashed line.

#### **Examiner Interview on December 21, 2007**

Applicant thanks Examiner Stace for granting the telephone interview on December 21, 2007. In the interview, independent Claims 1, 14, 20, and 24 were discussed. In particular, Applicant and Examiner discussed a contemplated amendment to Claim 1 directed to adding a rules event table and characterizing the interactions of the engine with the rules event table as well as amendments to Claims 14, 20, and 24 that were consistent with the contemplated amendment to Claim 1. The Examiner provided further suggestions to improve consistency among the amendments. The present response substantially conforms with the discussions of that telephone interview.

#### **Response to Objections**

Claim 1 has been amended to read --An application specification cache management system.--. In Claim 14, the second period at the end of the claim has been deleted and in Claim 24, a space has been added between the comma and wherein. These amendments are respectfully submitted not to introduce new matter, and are offered for clarification purposes only, as suggested by the Examiner.

**Response to Rejections**

The pending disclosure teaches systems and methods for an application cache management system. These rules and methods may permit individual applications to create application specific caching rules. An engine may use these caching rules to monitor an in-memory database system. This engine will enhance database and caching operations by optimizing how data is cached based upon application specific rules. At least in part, the engine achieves this enhancement by unburdening the applications from implementing the caching rules directly in the application instructions. Specifically, the engine may monitor a rules event table portion of the in-memory database system, determine that a rule is ready to execute, and execute the rule without the involvement of the application. The rules event table is established and maintained by functionality implemented outside of the in-memory database system.

With regard to the art rejections, the Office Action has cited *TimesTen*. However, *TimesTen* does not disclose structure or methods that promote the applications delegating responsibility for implementing and applying caching rules to the engine. See below for specific details with regards to the amendments to claims and support therefore in the original specification.

**Rejections under Section 112**

In the Office Action dated November 5, 2007, claims 1-19 and 24-29 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claims 1, 14, 20, and 24:**

Claim 1, Claim 14, and Claim 24 have been amended to remove the text “. . . the in-memory database server. . .,” thereby overcoming the antecedent basis problem identified by the Examiner. Claim 1 and Claim 14 have been amended to remove the text “wherein the engine monitors the in-memory database system and applies the rule to the application specific cached data without the involvement of the . . . in-memory database [system],” thereby overcoming the ambiguity problem identified by the Examiner. Claim 1 has been amended to remove the text “without the involvement of the in-memory database system,” thereby overcoming the contradiction identified by the Examiner. Claim 20 has been amended to read in part, “caching at least a portion of the wrapped application data according to the rule, to create application cache data;” Applicant believes that addition of the comma clarifies the antecedent basis problem identified by the Examiner. Specifically, in this claim element, Applicant is referring to “the rule” introduced as “a rule related to the data from an application” in the first claim element and the phrase “to create application cache data” refers back to “caching.”

**Rejections under Section 103**

In the Office Action dated November 5, 2007, Claims 1-20 and 22-26 were rejected under 35 USC § 103(a) as being anticipated by “*Mid-Tier Caching: The TimesTen Approach*” (hereinafter “*TimesTen*”) in view of *Coram, et al.* (U.S. Patent Application Publication No. 2002/0107835, hereinafter “*Coram*”).

**Claim 1:****I. *Coram* and *TimesTen* do not teach or suggest a rules event table polled by an engine.**

Applicant respectfully submits that the prior art of record does not teach or suggest all of the claim limitations found in Claim 1. Specifically, Claim 1 recites “a rules event table stored in the in-memory database system containing at least one entry comprising a rule type and a reference to the application specific data, the rule type associated with the rule defined by the application” and “an engine that polls the rules event table, determines that an entry in the rules event table has a rule type that is ready to execute, and applies the rule associated with the rule type of the entry to the application specific cached data referenced by the entry in response to the engine determining that the rule type is ready to execute.” Neither *TimesTen* nor *Coram* identify or describe a region of the in-memory database that contain entries comprising a rule type and a reference to data that correspond to the rules event table and do not identify or describe an engine that interacts with the rules event table as claimed. The interaction of the engine with the rules event table promotes the delegation of responsibility for at least asynchronous cache operations to the engine, thereby disburdening the application from this responsibility. As stated at paragraph 0039 of the original specification, “It can be seen that this functionality provides implementation of application 11a specific rules without the inefficiencies associated with these rules being implemented by the application 11a.” Support for the rules event table is found at least in paragraph 0039 of the original specification. Support for the interaction between the engine and the rules event table is found at least in paragraph 0040 of the original specification.

New Claim 30 depends from Claim 1 and has been added to provide greater clarity about the rule. Support for this new Claim 30 is provided at least in paragraph 0037 of the original

specification. New Claim 31 depends from Claim 30 and further characterizes definition of the rule by the application. Support for this new Claim 31 is provided at least in paragraph 0037. New Claim 32 depends from Claim 1 and has been added to further characterize the engine. Support for this new Claim 32 is provided at least in paragraph 0050 of the original specification.

Dependent Claims 2, 5, 6, 8-13, and 30-32 depend directly or indirectly from independent Claim 1 and incorporate all of the limitations thereof. Accordingly, for at least the reasons established above, Applicant respectfully submits that Claims 1, 2, 5, 6, 8-13, and 30-32 are not taught or suggested by *TimesTen* in view of *Coram* and respectfully requests allowance of these claims.

**Claim 14:**

**II. Coram and TimesTen do not teach or suggest a rules event table polled by an engine.**

Applicant respectfully submits that the prior art of record does not teach or suggest all of the claim limitations found in Claim 14. Specifically, Claim 14 recites “a rules event table stored in the in-memory database system containing at least one entry comprising a rule type and a reference to the application specific data, the rule type associated with the rule defined by the application” and “an engine that polls the rules event table, determines that an entry in the rules event table has a rule type that is ready to execute, and applies the rule associated with the rule type of the entry to the application specific cached data referenced by the entry.” Neither *TimesTen* nor *Coram* identify or describe a region of the in-memory database that provides the function of the rules event table and do not identify or describe an engine that interacts with the rules event table as claimed. The interaction of the engine with the rules event table promotes

the delegation of responsibility for at least asynchronous cache operations to the engine, thereby disburdening the application from this responsibility. Support for the rules event table is found at least in paragraph 0039 of the original specification. Support for the interaction between the engine and the rules event table is found at least in paragraph 0040 of the original specification.

Dependent Claims 15-19 depend directly or indirectly from independent Claim 14 and incorporate all of the limitations thereof. Accordingly, for at least the reasons established above, Applicant respectfully submits that Claims 14-19 are not taught or suggested by *TimesTen* in view of *Coram* and respectfully requests allowance of these claims.

**Claim 20:**

III. *Coram* and *TimesTen* do not teach or suggest a method including storing a rules event in a rules event table and polling the rules event table.

Applicant respectfully submits that the prior art of record does not teach or suggest all of the claim limitations found in Claim 20 as currently amended. Specifically, Claim 20 as currently amended recites “storing a rule event in a rules event table stored in the in-memory database server wherein the rule event comprises a rule type associated with the definition of the rule and a reference to the application data,” “polling the rules event table in the in-memory database server,” and “when the rule event is ready to be executed, applying the rule associated with the rule event to the wrapped application data associated with the rule event based on the rule component.” Neither *TimesTen* nor *Coram* identify or describe storing a rule event in a rules event table stored in the in-memory database server, polling the rules event table, and applying the rule associated with the rule event to the application data. Support for storing a rule



event in a rules event table is found at least in paragraph 0042. Support for the rules event table is found at least in paragraph 0039 of the original specification. Support for polling the rules event table is found at least in paragraph 0040 of the original specification. Support for “when the rule event is ready to be executed, applying the rule associated with the rule event to be wrapped application data associated with the rule event based on the rule component” is found at least in paragraph 0040 of the original specification.

Dependent Claims 22 and 23 depend directly or indirectly from independent Claim 20 and incorporate all of the limitations thereof. Accordingly, for at least the reasons established above, Applicant respectfully submits that Claims 20, 22, and 23 are not taught or suggested by *TimesTen* in view of *Coram* and respectfully requests allowance of these claims.

**Claim 24:**

**IV. Coram and TimesTen do not teach or suggest a rules event table polled by an engine.**

Applicant respectfully submits that the prior art of record does not teach or suggest all of the claim limitations found in Claim 24 as current amended. Specifically, Claim 24 as currently amended recites “a rules event table stored in the in-memory database system containing at least one entry comprising a rule type and a reference to the application specific data, the rule type associated with the rule defined by the application” and “an engine that polls the rules event table, determines that an entry in the rules event table has a rule type that is ready to execute, and applies the rule associated with the rule type of the entry to the application specific cached data referenced by the entry in response to the engine determining that the rule type is ready to execute.” Neither *TimesTen* nor *Coram* identify or describe a region of the in-memory database

that provides the function of the rules event table and do not identify or describe an engine that interacts with the rules event table as claimed. The interaction of the engine with the rules event table promotes the delegation of responsibility for at least asynchronous cache operations to the engine, thereby disburdening the application from this responsibility. Support for the rules event table is found at least in paragraph 0039 of the original specification. Support for the interaction between the engine and the rules event table is found at least in paragraph 0040 of the original specification.

Claim 27 depends from independent Claim 24. Claim 27 is currently amended to delete text associated with the rules event table, in view of the amendment to Claim 20 to include the rules event table.

Claim 29 depends from independent Claim 24. Claim 29 is currently amended to delete text associated with characterizing the interaction of the engine with the rules event table, in view of the amendment to Claim 20 to characterize this interaction, and to add a new limitation that further characterizes the engine functionality to include being operable “to remove the data referenced by the entry from the in-memory database management system and to remove the entry from the rules event table.” Support for this amendment is found at least in paragraph 0051 of the original specification.

Dependent Claims 25-29 depend directly or indirectly from independent Claim 24 and incorporate all of the limitations thereof. Accordingly, for at least the reasons established above, Applicant respectfully submits that Claims 24-29 are not taught or suggested by *TimesTen* in view of *Coram* and respectfully requests allowance of these claims.

**Conclusion**

Applicant respectfully submits that the present application is in condition for allowance for the reasons stated above. If the Examiner has any questions or comments or otherwise feels it would be helpful in expediting the application, he is encouraged to telephone the undersigned at (972) 731-2288.

The Commissioner is hereby authorized to charge payment of any further fees associated with any of the foregoing papers submitted herewith, or to credit any overpayment thereof, to Deposit Account No. 21-0765, Sprint.

Respectfully submitted,

Date: February 4, 2008

/Michael W. Piper/

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